

CLAIMS

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7. An abrasive article according to Claim 1 in which the friable filler particles are selected from aluminum oxide bubbles, zirconia oxide bubbles, glass bubbles, and vitrified alumina-silicate bubbles or pellets.

8. An abrasive article according to Claim 1 in which the resin bond is provided by a phenolic resin.

10. An abrasive article comprising:

1 (a) from about 50 to 90% by volume of the particulate content is provided by abrasive particles

4 (a) comprising from about 20 to about 100% of seeded sol gel alumina particles based on the volume of 5 particulate matter in the article sintered;

7 (b) from about 20 to about 70% of alumina bubbles based 8 the volume of particulate matter in the article; and

9 (c) a phenolic bonding resin.

11. An abrasive article according to Claim 10 in which the sol gel alumina particles each comprise a multitude of crystallites having a diameter of from about 0.4 micron or less.

12. An abrasive article according to Claim 10 in which up to about 80% by volume of the abrasive particles are provided by fused alumina particles.

13. An abrasive article according to Claim 10 in which the alumina bubbles have a mesh size of from about 10 to about 200 mesh.

14. An abrasive article according to Claim 1 in the form of an abrasive wheel having a substantially uniform structure throughout.

15. An abrasive article according to Claim 10 in the form of an abrasive wheel having a substantially uniform structure throughout.

16. An abrasive article according to Claim 11 in the form of an abrasive wheel having a substantially uniform structure throughout.

1                   17. A method of forming an abrasive article  
2                   which comprises:  
3                   A. forming a uniform mixture comprising:  
4                   (a) at least about 30% of the total  
5                   particulate volume is provided by  
6                   abrasive particles, comprising at  
7                   least about 30% of the total  
8                   particulate volume of particles of  
9                   sintered sol gel abrasive;  
10                  (b) friable filler particles; and  
11                  (c) a resinous bond in which the particles are  
12                  mounted and held;  
13                  B. shaping the mixture into that of the desired article;  
14                  and  
15                  C. curing the resin bond.

1                   18. A method of forming an abrasive article  
2                   which comprises:  
3                  A. forming a uniform mixture comprising:  
4                  (a) abrasive particles comprising from about 20 to  
5                  about 80% of the volume of particulate matter  
6                  in the article of sintered, seeded sol gel  
7                  alumina particles;  
8                  (b) from about 20 to about 70% of the volume of  
9                  particulate matter in the article of alumina  
10                 bubbles; and  
11                 (c) a phenolic bonding resin.  
12                 B. shaping the mixture into the form of the desired  
13                 article; and  
14                 C. curing the resin bond.